

REMARKS

Claims 1, 3-4 and 7-13 are pending in the present application. Claim 1 has been amended to recite “wherein the organic fine particles are a high hardness emulsion having a glass transition temperature of higher than 50° or crosslinked substances, and do not melt or decompose during thermal drying of the paint composition even when it is dried at 160°C, and wherein the emulsion is prepared from the monomer component which comprises an ethylenic unsaturated carboxylic acid alkyl ester monomer in an amount of 32 mass % or more and 60 mass % or lower, and the emulsion is prepared by emulsion polymerization and neutralized with an amine whose boiling point at 80 to 360°C, and wherein the glass transition temperature (Tg) of the emulsion is calculated from the Tg value of homopolymers of the respective monomers constituting the emulsion” in place of “wherein the organic fine particles exhibit high hardness, have a glass transition temperature of higher than 50°C, are crosslinked substance, and do not melt or decompose during thermal drying of the paint composition even when it is dried at 160°C.” Support for this amendment can be found on page 15, lines 22-24 and page 15, lines 29-32, page 21, lines 7-18, page 12, line 30 to page 13, line 10, and page 23, lines 18-20 of the specification.

Newly presented claim 12 finds support at page 18, lines 19-21 of the specification.

Newly presented claim 13 finds support at page 9, lines 24-26 of the specification.

The amendments to the claims and newly presented claims do not introduce any new matter.

The objection to claim 9 has been overcome by the amendment to claim 1. In particular, the claim recitation “wherein the organic fine particle is (meth)acrylic acid base emulsion or polymethyl (meth)acrylate-based crosslinked substances” is no longer outside the scope of claim 1, as amended.

Claim 8 was rejected under 35 USC § 112, first paragraph. This rejection of claim 8 is not deemed tenable. The specification clearly supports the recited temperature for the loss factor of “25°C.” For example, page 15, line 10 of the present specification clearly describes that the

loss factor is determined at 25°C. In addition, it is described on page 30, lines 12-23 of the present specification that the loss factor is measured at 25°C in the Examples.

The rejection of claims 1, 3-4 and 7-11 under 35 USC § 112, second paragraph, is not deemed tenable.

The T_g recited in the present claims is the T_g of the polymer which exists in the paint composition in the form of an emulsion.

The polymer can have a T_g of 50°C or lower.

As for the method for determining the T_g of polymer, the method for calculating the T_g of the polymers is introduced in Claim 1, as shown above.

The detailed calculation method is as follows:

“The T_g can be determined through the following calculation formula, theoretically, (Equation 1)

$$\frac{1}{Tg'} = \left[\frac{W_1'}{T_1} + \frac{W_2'}{T_2} + \dots + \frac{W_n'}{T_n} \right]$$

in the formula, T_g represents the T_g of the acrylic copolymer (absolute temperature);

W₁, W₂, and ··· W_n each represents a mass fraction of each monomer to all the monomer components; and

T₁, T₂, and ··· T_n each represents a glass transition temperature (absolute temperature) of a homopolymer prepared by each monomer component.”

This method is well-known in the technical field of polymers and persons skilled in the art readily understand and appreciate that the T_g of the polymer is calculated according to the above equation from the description introduced in Claim 1.

The meaning of limiting the T_g of the polymer is described in the present specification. For example, it is described on page 4, lines 20 to 28 as follows:

“by using the emulsion of which a glass transition temperature is specified to be lower as such an emulsion in order to facilitate a film formation in thermal drying and combining the emulsion with organic fine particles of which a mean particle diameter is specified to be smaller, the occurrence of blister was suppressed and the thermal drying characteristics becomes excellent, and thereby the paint

composition becomes favorable as a material forming a thick film, and has come up with the idea that the above-mentioned issues can be well solved.”

Also, it is described on page 6, lines 4-9 as follows:

“Further, in a vibration damping material formed from the above-mentioned emulsion for the vibration damping material, by adjusting a glass transition temperature of the emulsion, an effect of enhancing the action to prevent vibrations and noises in various structures and to keep quietness is adequately attained.”

The Tg of the base emulsion used in the Examples 1 to 6 and Comparative Examples 1 to 3 of the present invention is 31°C.

The Tg of the emulsion used in the Examples 7 to 12 and Comparative Examples 4 to 7 of the present invention is 10°C.

Claims 1, 4 and 7-11 were rejected under 35 U.S.C. § 102 (b) as being anticipated by or under 35 USC § 103(a) as being obvious over US Patent 5,688,853 to Salter. Claims 1, 4 and 7-11 were also rejected under 35 U.S.C. § 102 (b) as being anticipated by or under 35 USC § 103(a) as being obvious over US Patent 5,688,853 to Salter in view of US Patent 5,308,890 to Snyder and/or Nippon Shokubai, PRODUCT LIST, Basic Chemicals/Functional Chemicals. The cited references fail to anticipate and fail to render obvious the present invention.

The emulsion in the paint composition for thermal drying as now recited in amended Claim 1, recites an emulsion which is prepared by emulsion polymerization and neutralized with an amine whose boiling point at 80 to 360°C, and preparing the emulsion polymer from the monomer component which comprises an ethylenic unsaturated carboxylic acid alkyl ester monomer in an amount of 32 mass % or more and 60 mass % or lower.

None of the cited references, Salter, Snyder and Nippon Shokubai, disclose neutralization with an amine whose boiling point at 80 to 360°C, or preparing an emulsion polymer from a monomer component which comprises an ethylenic unsaturated carboxylic acid alkyl ester monomer in an amount of 32 mass % or more and 60 mass % or lower.

Thus, the paint composition for thermal drying as recited in the present claims is not anticipated by and not obvious from the disclosure of the cited references.

As described on page 21, lines 7-23 of the present specification, by containing the ethylenic unsaturated carboxylic acid monomer, it becomes possible to enhance the dispersibility

of the filler such as an inorganic powder and to improve the vibration damping property more in the dampening coating formulation comprising the above-mentioned emulsion for the vibration damping material. Also, the amount of the ethylenic unsaturated carboxylic acid monomer of from 32 to 60 weight % is preferable for exhibiting such effect.

In addition, as described on page 13, lines 7-10 of the present specification, using an amine whose boiling point at 80 to 360°C contributes to improved thermal drying characteristics and improved dry blistering properties.

The present invention is achieved by optimization of the monomer for preparing the emulsion or the neutralizing agent used for preparing the emulsion, and shows superior results and unexpected advantages as compared to the cited art.

Thus, the paint composition for thermal drying of the present invention is novel over and not obvious from the disclosure of the cited references.

The cited references fail to anticipate the present invention. In particular, anticipation requires the disclosure, in a prior art reference, of each and every recitation as set forth in the claims. See *Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 USPQ2d 1081 (Fed. Cir. 1986), and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 USPQ2d 1241 (Fed. Cir. 1986).

The mere fact that the cited art may be modified in the manner suggested in the Office Action does not make this modification obvious, unless the cited art suggest the desirability of the modification or well reasoned and articulated rationale. This not present in the present record. The Examiner's attention is kindly directed to *In re Lee* 61 USPQ2d 1430 (Fed. Cir. 2002), *In re Dembiczak et al.* 50 USPQ2d. 1614 (Fed. Cir. 1999), *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984), *In re Laskowski*, 10 USPQ2d. 1397 (Fed. Cir. 1989) and *In re Fritch*, 23, USPQ2d. 1780 (Fed. Cir. 1992).

Also, the cited art lacks the necessary direction or incentive to those of ordinary skill in the art to render a rejection under 35 USC 103 sustainable. The cited art fails to provide the degree of predictability of success of achieving the properties attainable by the present invention needed to sustain a rejection under 35 USC 103. See *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727; 82 USPQ2d 1385 (2007), *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315 (Fed.

Cir. 1988), *In re Mercier*, 187 USPQ 774 (CCPA 1975) and *In re Naylor*, 152 USPQ 106 (CCPA 1966).

Moreover, the properties of the subject matter and improvements which are inherent in the claimed subject matter and disclosed in the specification are to be considered when evaluating the question of obviousness under 35 USC 103. See *KSR Int'l Co. v. Teleflex, Inc.*, supra; *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d. 1923 (Fed. Cir. 1990), *In re Antonie*, 195, USPQ 6 (CCPA 1977), *In re Estes*, 164 USPQ 519 (CCPA 1970), and *In re Papesch*, 137 USPQ 43 (CCPA 1963).

No property can be ignored in determining patentability and comparing the claimed invention to the cited art. Along these lines, see *In re Papesch*, supra, *In re Burt et al*, 148 USPQ 548 (CCPA 1966), *In re Ward*, 141 USPQ 227 (CCPA 1964), and *In re Cescon*, 177 USPQ 264 (CCPA 1973).

In view of the above amendment, applicant believes the pending application is in condition for allowance.

In the event that the Examiner believes that an interview would serve to advance the prosecution of this application, the undersigned is available at the number noted below.

Please charge any fees due with this response to our Deposit Account No. 22-0185, under Order No. 21581-00318-US from which the undersigned is authorized to draw.

Dated: 4-11-08

Respectfully submitted,

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